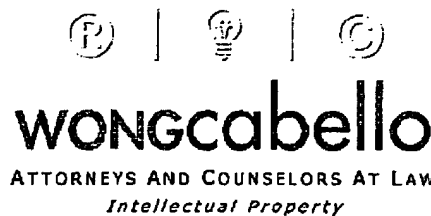


APR 21 2006



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Re: S/N 10/689,392

Pages (including cover page): 8

COMMENTS:

Attached for filing in connection with application serial no. 10/689,392 in the name of Robert E. Smith III, filed 10/20/2003, and entitled: Seal Retainer with Pressure energized Metal Seal Members for Undersea Hydraulic Coupling:
7-page Reply Brief with Revised Claims Appendix.

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APR 24 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Robert E. Smith III

Serial Number: 10/689,392

Filed: 10/20/2003

For: SEAL RETAINER WITH PRESSURE

ENERGIZED METAL SEAL

MEMBERS FOR UNDERSEA

HYDRAULIC COUPLING

www.pearsoned.com

Confirmation No. 2874

Examiner: Alison K. Pickard

Group art unit: 3673

Atty Docket No. 221-0074US

Commissioner for Patents
P. O. Box 1450
Alexandria, Virginia 22313-1450

REPLY BRIEF

I. Listing of Claims

The Examining Attorney's Answer is correct in stating that a word was omitted from claim 8 in the Claims Appendix of Applicant's Appeal Brief. Claim 8 should read as follows:

8. The seal retainer of claim 7 wherein the metal concave seal is adapted to be pressure energized by fluid pressure on either the interior or exterior of the seal retainer.

A revised Claims Appendix is attached.

CERTIFICATE OF TRANSMISSION

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By:

Christopher D. Keirs

Date:

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II. Argument

The claimed invention is a seal retainer for an undersea female hydraulic coupling member comprising at least two, pressure-energized, metal seals that are integral with the seal retainer.

The Examiner Answer contends that the cited Smith016 reference discloses a seal retainer with seals 15 and 55 that “can be considered ‘integral’ in that they are provided with the retainer in the hydraulic coupling member as a unit that functions together.” This is a distortion of the ordinary meaning of the word “integral” and is contrary to the way that term is used in the specification of the subject application. In this context, “integral” means “formed as a unit with another part <a seat with *integral* headrest>”¹ Both references cited by the Examiner as describing integral metal seals (Press and Cunningham) have seals that are a portion of another part (13 in Press; 30D in Cunningham), not merely “units that function together.”

The Examiner’s Answer contends that “both Smith and Press relate to fluid couplings having a retainer and a pressure-energized metal seal. Both disclose pressure-energized seals having lips that are affected by pressure.” But there is no mention of a pressure-energized seal in Press. Rather, the swivel joint assembly of Press employs flanged nut 17 to load resilient flange 16 (the integral metal seal) and engage shoulder 15 of member 12. [col. 2; lines 14-42]

The Examiner’s Answer contends that Press discloses a retainer 35 or 13 “that that the element ‘retains’ the seal within the coupling.” Under this logic, any device having a seal would necessarily have to have a “seal retainer.” But the only embodiment disclosed in Press that could reasonably be considered to have a retained seal is that shown in Fig. 5

¹ Miriam-Webster’s Collegiate Dictionary, 10th ed.

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wherein ring 30 is "retained" between swivel member 12 and swivel member 35. This is the one embodiment of Press that does not have an integral metal seal. The embodiments disclosed in Press that have integral metal seals have no need of a seal retainer because the non-separable pipe swivel joint assembly described by Press forms the seals in the ends of the pipe sections themselves.

It should be noted that ring 30 "with axially opposed frusto-conical flexible flanges 31 and 32 separated by a rigid body portion 33" [col. 3; lines 25-28] in the embodiment of Fig. 5 of Press is essentially a V-seal, similar to V-seal 15 of the connector disclosed in Smith016. Neither reference discloses how such a seal could be made integral with a seal retainer. Thus, one skilled in the art studying the disclosure of Smith016 would not find in Press a way to make that pressure loaded V-seal integral with the seal retainer -- the embodiment of Press that employs a V-seal does not make that seal integral with the pipe section ends (or any other element of the assembly).

In *United States v. Adams*,² the Supreme Court confirmed that "[w]hile the claims ... limit the invention, and specifications cannot be utilized to expand the patent monopoly, ... claims are to be construed in the light of the specifications and both are to be read with a view to ascertaining the invention."³

In *Autogiro Co. of America v. United States*,⁴ the Court of Claims noted that "the specification aids in ascertaining the scope and meaning of the language employed in the claims inasmuch as words must be used in the same way in both the claims and the specification... . The use of the specification as a concordance for the claim is accepted by almost every court, and is a basic concept of patent law."⁵

² *United States v. Adams*, 383 U.S. 39, 178 USPQ 479 (1966).

³ 383 U.S. at 48-49, 178 USPQ at 482.

⁴ *Autogiro Co. of America v. United States*, 384 F.2d 391, 155 USPQ 697 (Ct. Cl. 1967).

⁵ 384 F.2d at 397-98, 155 USPQ at 702-03.

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In *Standard Oil Co. v. American Cyanamid Co.*,⁶ the Federal Circuit indicated that the specification was the "primary basis for construing the claims" because "the words of the claims must be based upon the description."⁷

It is clear from both the specification of the subject application and the specification of the Smith016 reference that a "seal retainer" is a separate, insertable element in an hydraulic coupling. It is also clear from the specification of the subject application and the specification of Press that an "integral seal" must be formed as a unit with another part. Read in light of these specifications, there is no "seal retainer" in the pipe swivel joint described in Press and there are no "integral" seals on the seal retainer of the Smith016 coupling.

Claim 1 is to a seal retainer comprising two integral metal seals. Sleeve member 22 of Smith016 (which holds annular soft seals 26 and 27) has no integral seals of any type. This may be clearly seen in the exploded view of Figure 3. All the sealing elements of Smith016 (V-shaped seal 15, annular soft seals 26 & 27 and metal C-seal 55) are separate pieces – not "integral" with sleeve 22.

The swivel joint assembly described in Press has no "seal retainer" as that term is used in the application and in the cited Smith016 reference.

Press describes a non-separable pipe joint wherein the ends of the pipes themselves are formed into male and female members which are held together by flanged nut 17. As may be clearly seen in Figure 1, there is no seal retainer (as that term should be understood in view of the specification) in the swivel joint of Press. Those skilled in the art will appreciate that a seal retainer in an hydraulic coupling requires both sealing engagement with the male member and with the body of the female member. But the integral seal described in Press is only a single lip seal. The joint assembly of Press requires only a single seal because there is no separate retainer (which would require sealing to the opposing member). Accordingly,

⁶ *Standard Oil Co. v. American Cyanamid Co.*, 774 F.2d 448, 227 USPQ 293 (Fed. Cir. 1985).

⁷ 774 F.2d at 452, 227 USPQ at 296.

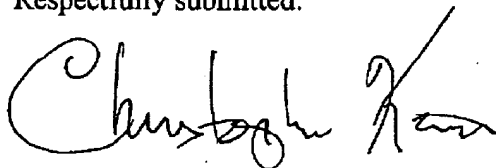
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there is no motivation for one skilled in the art to combine the teachings of Smith016 and Press to reach the claimed invention.

III. Conclusion

Applicant's claimed invention comprises a seal retainer having at least two, integral metal seals. The Smith016 reference, entitled "Internal Pressure Loaded V-Seal Connector," discloses a coupling having a V-seal held by a seal retainer having no integral seals. The Press reference describes a swivel joint assembly for pipes that, in certain embodiments, employs an integral metal seal. But, in the embodiment of Press having a V-seal, the seal is non-integral. One skilled in the art reading Smith016 in view of Press would logically conclude that the primary seal of the Smith016 coupling could not be made integral with the seal retainer. Combining the cited references simply doesn't lead to the claimed invention.

Respectfully submitted:



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221-0074US**IV. Claims Appendix (revised)**

1. A seal retainer for an undersea female hydraulic coupling member, comprising:
 - a. a first metal seal integral with the seal retainer for creating a pressure-energized seal between the seal retainer and a probe of a male coupling member inserted in a female hydraulic coupling member containing the seal retainer; and,
 - b. a second metal seal integral with the seal retainer for creating a pressure-energized seal between the seal retainer and a female hydraulic coupling member containing the seal retainer.
2. The seal retainer of claim 1 wherein the first integral metal seal is a metal lip seal.
3. The seal retainer of claim 2 wherein the first integral metal lip seal is dimensioned such that it is slightly displaced when the probe of a male coupling member is inserted.
4. The seal retainer of claim 3 wherein the displacement of the first integral metal lip seal is about 0.001 inches.
5. (objected to)
6. The seal retainer of claim 2 wherein the first integral metal lip seal is configured to be pressure energized by fluid surrounding the probe of the male member.
7. The seal retainer of claim 1 wherein the second integral metal seal is a metal concave seal.

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8. The seal retainer of claim 7 wherein the metal concave seal is adapted to be pressure energized by fluid pressure on either the interior or exterior of the seal retainer.

9. (canceled)

10. (canceled)

11. An undersea female hydraulic coupling member comprising a seal retainer comprising a first integral metal pressure energized seal for forming a seal between the seal retainer and a probe of a male coupling member inserted in the female coupling member, and a second integral pressure energized metal seal for forming a seal between the seal retainer and a shoulder of the female coupling member containing the seal retainer.

12. The undersea hydraulic coupling member of claim 11 wherein the first integral metal pressure energized seal is a metal lip seal.

13. The undersea hydraulic coupling member of claim 12 wherein the second integral pressure energized metal seal is a metal concave seal.

14. The undersea hydraulic coupling member of claim 12 wherein the integral metal lip seal is slightly displaced when the probe of the male coupling member is inserted into the female coupling member.

15. The undersea hydraulic coupling member of claim 13 wherein the integral metal concave seal is slightly displaced when the seal retainer is installed in the female coupling member.

16. The undersea hydraulic coupling member of claim 14 wherein the displacement of the integral metal lip seal is about 0.001 inches.